

REMARKS

This Amendment is filed in response to the Office action mailed May 20, 2005. This amendment addresses each of the rejections and objections posed by the examiner. Accordingly, applicant respectfully requests reconsideration.

Claims 1-28 were originally presented. Claims 1, 4, 12, and 20 have been amended. Claims 2, 16, and 22 have been cancelled.

At paragraphs 2-3 of the Office action, claims 1-5, 11-12, 18-21, 24, and 28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Anderson, U.S. Patent No. 6,567,122 (hereinafter Anderson) in view of Luster, U.S. Patent No. 5,715,051 (hereinafter Luster).

By way of background, generally, applicant variously claims an interface that allows a self-contained industrial machine vision system residing in a camera unit to be interfaced with and communicated with via either a computer having a generic web browser or a personal digital assistant (PDA). The processing element of the machine vision system is contained entirely in the image element (camera) and is adapted to perform a machine vision tool task while the interface device (computer or PDA) is disconnected.

For a rejection under 35 U.S.C. § 103(a) to be proper, the combined references must contain or suggest *each and every element* of the rejected claim, *and* the references must suggest such combination to those skilled in the art. Applicant respectfully urges that Anderson and Luster, either taken singly or taken in any combination, are legally in-

sufficient to render claim 1 as amended obvious under 35 U.S.C. § 103(a) because 1) the references are isolated teachings of separate concepts in separate arts, 2) the references do not suggest combination with each other, and 3) even when combined, the references lack applicant's claimed novel web-based machine vision interface, particularly including webpage screens "*constructed and arranged for selecting predetermined functions for at least one of installing, configuring, training, monitoring, and controlling the machine vision system,*" combined with the capability to "*perform a machine vision tool task while the human/machine interface device is disconnected from the communications interface,*" as recited in claim 1 as amended.

Anderson teaches a web camera with a web address to allow access thereto. As examiner noted at page 4 of the Office action, "*Anderson does not teach this image apparatus being used in machine vision systems.*" (emphasis added) More precisely, Anderson does not teach a processing element, contained entirely in the image element, adapted to perform a machine vision tool task while the interface is disconnected, nor does Anderson suggest such a function. Anderson suggests three functions, (at column 10, line 57 through column 11, line 34) all of which generally relate to "remote surveillance," (column 11, line 31) a separate field of invention from industrial machine vision systems. While some of the remote surveillance functions suggested in Anderson imply nominal internal processing capability in the webcam, they are in no way suggestive of, or compatible with, the highly specialized class of processing tasks and device interactions required to implement machine vision. Rather, Anderson suggests only the basic frame-grabbing and image-buffering functions that are inherent in many digital cameras. Thus,

Anderson nowhere suggests selectively combining a passive webcam with various industrial machine vision systems to produce a novel, self-contained, remotely accessible machine vision system serving a fundamentally different purpose from that of a webcam, as recited in claim 1 as amended of the instant application.

Luster teaches a typical machine vision system, including *all of the disadvantages* addressed by applicant's system, without mentioning or suggesting a solution to such disadvantages. Luster generally teaches a camera connected to a machine vision processing element, in turn connected to a host computer, for detecting defects in optical media substrates (e.g., CDs). Three points are immediately apparent: 1) Luster nowhere suggests that there would be any need for, or benefit to, applying webcam technology to remotely access the system; 2) Luster nowhere suggests connecting the image element to more than one host computer, as doing so would be redundant and wasteful given Luster's 'hard-wired' interface; and 3) Luster nowhere suggests disconnecting the host computer and adapting the image element to perform the machine vision tool task as a stand-alone device. Overall, Luster demonstrates the general state of the art prior to applicant's invention.

In this case, it is improbable that one of ordinary skill in the industrial machine vision art would be motivated to reference unrelated webcam art for solutions. Even if one were to look to webcam art for a solution, Anderson offers no teaching or suggestion of its applicability to industrial machine vision systems. At most, Anderson teaches buffering of acquired images for later download. The complex task of machine vision processing is clearly beyond Anderson's scope or contemplation. Likewise, Luster nowhere

teaches or suggests the need for or value of a self-contained, remotely accessible machine vision system *specifically allowing disconnection*, during *runtime*, of a web-based installation, configuration, training, and monitoring interface. These references are isolated teachings of separate concepts in separate arts. To combine these references necessarily requires the examiner to draw upon improper hindsight that, respectfully, is had only with the benefit of applicant's specification and claimed invention.

Furthermore, even if one were to combine Anderson and Luster, these references, at most, disclose a camera communicating, via a communications interface, with a processing element and human/machine interface on a host computer. Although the human/machine interface in this combination may be a generic web browser, the complex image processing functionality of the system still resides on the host computer, which is fundamentally different from applicant's system, which uses a *self-contained* machine vision *image element* capable of "*perform[ing] a machine vision tool task while the human/machine interface device is disconnected from the communications interface.*" Lacking any reference to or suggestion of these elements, recited in claim 1 as amended, the combination of Anderson and Luster fails to render applicant's invention obvious under 35 U.S.C. § 103(a).

Again, as noted above, *neither* Anderson nor Luster teaches or suggests webpage screens "*being constructed and arranged for selecting predetermined functions for at least one of installing, configuring, training, monitoring, and controlling the machine vision system,*" originally recited in claim 2 and now incorporated into claim 1 as amended. Anderson's teachings, at lines 64-65 of column 13, of "control buttons for

camera control” cannot be interpreted in the context of industrial machine vision art, given that, “Anderson does not teach this image apparatus being used in machine vision systems,” as the examiner properly noted at page 4 of the Office action. Moreover, as the examiner noted at page 14 of the Office action, “Anderson and Luster do not teach anything about configuring or providing the training to the memory of image device.” Rather, Anderson teaches that the host computer may interact with the webcam in a typical manner contemplated in the webcam art, which, absent improper hindsight, does not suggest “*installing, configuring, training, monitoring, and controlling [a] machine vision system.*” Thus, combining Luster and Anderson would still fail to teach or suggest applicant’s claimed novel web-based interface for “*installing, configuring, training, monitoring, and controlling the machine vision system.*”

Therefore, applicant respectfully urges that Anderson and Luster are legally insufficient to render the invention recited in claim 1 as amended obvious under 35 U.S.C. § 103(a) because: 1) they relate to different fields of technology; 2) neither suggests combination with the other; 3) such selective combination would not be obvious to those skilled in the art; and 4) such selective combination would still fail to yield applicant’s invention. Thus, independent claim 1 should be allowable over the prior art as reciting a patentably unique and non-obvious combination of elements.

Although not cited against claim 1, Nichani, U.S. Patent No. 5,673, 334 (hereinafter Nichani) was additionally cited against claim 16. Amended claims 1, 4, 12, and 20 now recite, generally, “*installing, configuring, training, monitoring, and controlling the machine vision system.*” Specifically, at paragraph 8 of the Office action, dependent

claims 13-17 and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Anderson in view of Luster, and further in view of Nichani. Of those claims, claims 16 and 22 have been cancelled, and the examiner's rejections thereto are thereby rendered moot. Applicant hereby respectfully traverses the examiner's rejections based on Nichani, as applied to claims 13-15, 17, and claim 1 as amended. This reference will now be addressed prospectively.

Nichani deals generally with machine vision image processing technology and teaches a machine vision system which may be trained by an operator to recognize "a pattern of interest within an image." (column 6, lines 13-14) Similar to Luster, 1) Nichani nowhere suggests that there would be any need for, or benefit to, applying web-cam technology to remotely access the system; and 2) Nichani nowhere suggests disconnecting the host computer and adapting the image element to perform the machine vision tool task as a stand-alone device. More generally, Nichani teaches a machine vision image recognition algorithm, without suggesting that any improvement is necessary to the human/machine interface. Similarly to Luster, Nichani again demonstrates the general state of the machine vision art prior to applicant's invention, including *all of the disadvantages* overcome by applicant's novel interface. Specifically, Nichani contains no reference to, or suggestion of, using a generic web browser as the human/machine interface.

Therefore, selective combination of particular elements of Anderson, Luster, and Nichani is neither suggested nor obvious, because: 1) "Anderson and Luster do not teach anything about configuring or providing the training to the memory of image device," as the examiner noted at page 14 of the Office action; 2) Nichani does not teach anything

about using a generic web browser as the human/machine interface; and 3) Nichani does not suggest that any improvement is necessary to prior art human/machine interfaces. Thus, dependent claims 13-15 and 17 should be allowable under 35 U.S.C. § 103(a) in view of Anderson, Luster, and Nichani. Furthermore, examiner's reference to Nichani is not legally sufficient to render applicant's novel web-based interface recited in claim 1 as amended obvious under 35 U.S.C. § 103(a).

Therefore, independent claim 1 as amended is believed to be in condition for allowance.

Regarding the same references as applied to independent claim 4, Anderson and Luster are isolated teachings of separate concepts in separate arts, and the explanation for the non-combinability of these references, provided above, also applies to claim 4 and all other claims herein. Anderson also teaches away from proprietary, non-generic interfaces (column 2, line 8 through column 4, line 56). Nevertheless, even when combined, these references lack any teaching or suggestion of a "*human/machine interface device compris[ing] a personal digital assistant (PDA)*," with an interface for "*installing, configuring, training, monitoring, and controlling the machine vision system*," which "*is adapted to perform a machine vision tool task while the human/machine interface device is disconnected*," as recited in amended claim 4. Thus, in addition to every distinction discussed above regarding claim 1, claim 4 as amended is additionally distinguishable because it recites a "*human/machine interface device compris[ing] a personal digital assistant (PDA)*."

More specifically, Anderson teaches a method of accessing a webcam via a web browser, whereas claim 4 as amended makes no mention of web browsers. The web browser interface is an integral part of the system taught by Anderson, given that Anderson's purpose is to function "with typical, widely used web browsers... [in order to] provide a simple, intuitive, and familiar interface" (column 5, lines 62-64, and column 15, lines 59-61). Although Anderson suggests "access[ing] the internet using a web browser... running on any one of a variety of devices," (column 9, lines 34-36) Anderson specifically teaches away from proprietary or non-generic interfaces (NetMeeting and CoolTalk, as examples given in Anderson) (column 2, line 8 through column 4, line 56). Thus, in addition to the distinctions applied to claim 1 above, claim 4 is additionally distinguishable from the prior art because it recites a non-web-browser-based interface, which Anderson teaches away from.

Moreover, in addition to lacking any suggestion of combination with each other, and in addition to teaching away from proprietary, non-generic interfaces, Anderson and Luster, when combined, still lack multiple elements of applicant's novel invention, namely: e.g. a "*human/machine interface device compris[ing] a personal digital assistant (PDA),*" with an interface for "*installing, configuring, training, monitoring, and controlling the machine vision system,*" which "*is adapted to perform a machine vision tool task while the human/machine interface device is disconnected.*"

In summary: 1) Anderson and Luster are isolated teachings of separate concepts in separate arts; 2) neither suggests combination with the other; 3) such combination, without improper hindsight, would not be obvious to those skilled in the art; 4) Anderson

specifically teaches away from proprietary, non-generic interfaces; and 5) even if combined these references lack multiple elements of applicant's novel invention, recited in claim 4 as amended, most particularly a "*human/machine interface device compris[ing] a personal digital assistant (PDA)*."

Therefore, independent claim 4 as amended is believed to be in condition for allowance.

The remaining independent claims 12 and 20 were also rejected under 35 U.S.C. § 103(a) in view of Anderson and Luster. The explanation for the non-combinability of these references is provided above in reference to claim 1. In particular, as discussed above in reference to claim 4, Anderson teaches away from non-web-browser-based interfaces, as recited in claim 20. Therefore, applicant respectfully urges that Anderson and Luster, either taken singly or in any combination, are legally insufficient to render claims 12 and 20 obvious under 35 U.S.C. § 103(a).

Thus, all independent claims are believed to be in condition for allowance.

Likewise, all dependent claims are believed to be dependent from allowable base claims, and therefore in condition for allowance.

In summary, the application should now be in condition for allowance with the examiner's rejections respectfully addressed and traversed. Applicant therefore respectfully requests the examiner to issue a Notice of Allowance at the earliest possible date.

Applicant earnestly solicits the examiner to contact the undersigned to advance the prosecution in any respect.

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